

Claims

1. A device for high-frequency and/or radio-frequency tuning comprising within one IC-package a first variable capacitor and at least one second capacitor, each of the at least one second capacitor being fixed or variable respectively, at least one signal path connected to the first variable capacitor and providing at least one input and one output port and at least one controllable switching means for individually connecting and disconnecting at least one of the at least one second capacitor into the signal path or from the signal path, in parallel to the first variable capacitor.
2. The device of Claim 1, further comprising at least one control signal path isolated from the rf-signal path into which the at least one second capacitor is connectable for controlling the switching means and/or for controlling at least the first variable capacitor.
3. The device of Claim 2, wherein the at least one control path comprises means for digitally controlling a plurality of switching means individually, and/or wherein the at least one control path is connectable to an (E)EPROM, to an ASIC and/or to a FPGA, and/or wherein the at least one control path for controlling at least the first variable capacitor is adapted to be controllable via an analogue control signal or via a digital to analogue converter.
4. The device of Claim 1, further comprising at least two second capacitors arranged in logarithmic scale, and wherein the first variable capacitor at least is adapted to match the lowest range of the logarithmic scale.

5. The device of Claim 1, wherein the switching means respectively comprises an actuator for driving a contact element of the switching means to close or open the switching means, and/or wherein at least the first variable capacitor comprises an actuator for driving a movable element of said variable capacitor to vary the effective area thereof, in particular by changing the distance between at least two plates or the degree of engagement of fingers of a comblike structure.
6. The device of Claim 1, wherein the switching means and/or at least the first variable capacitor respectively comprises an actuating mechanism based on an electrostatic, piezoelectric, thermal, magnetic or bi-metallic actuator functionality.
7. The device of Claim 1, wherein at least one controllable switching means is produced as MEMS rf-switch means, at least the first variable capacitor is produced as MEMS varactor and/or at least one controllable switching means and a respectively associated second variable capacitor is produced as a common MEMS-component.
8. The device of Claim 1, produced by using a Micro-Electro-Mechanical-Systems technology, in particular produced by employing a bulk micromachining and/or a surface micromachining technology.